



Run Control

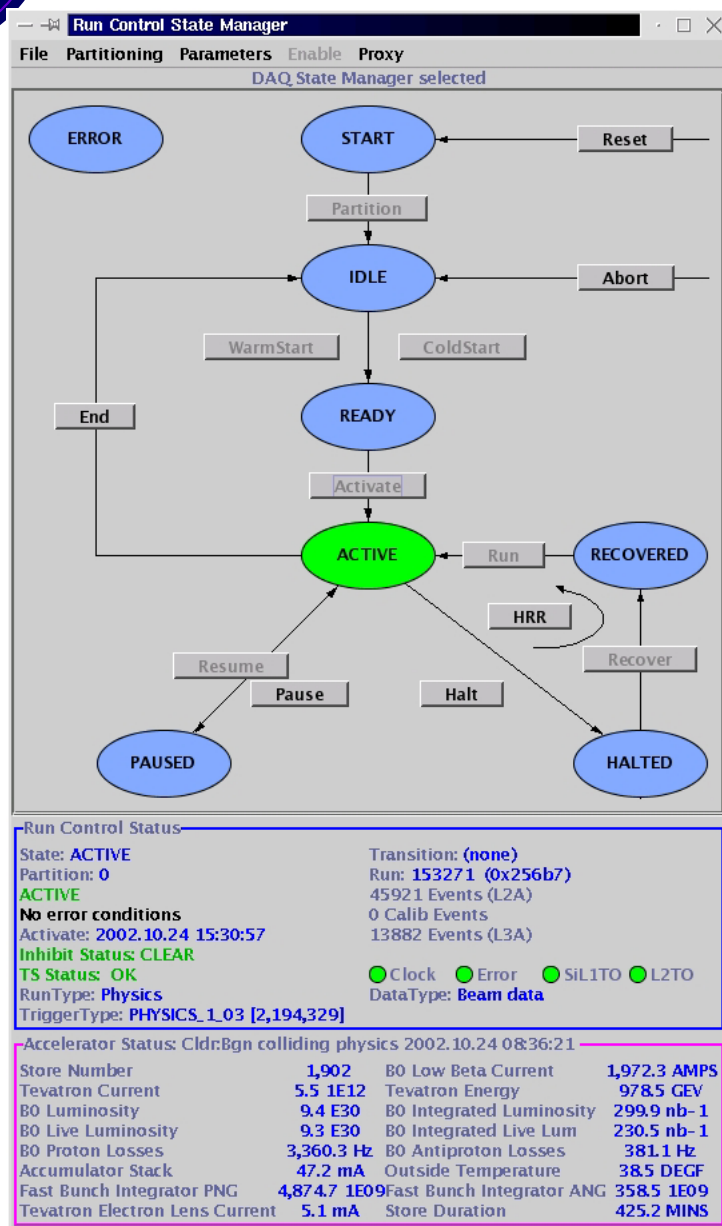
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Run Control &
Run Configuration
09-Apr-2003

How to start, configure
and operate
CDF Run Control



Run Control, main window

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Main Run Control Window:
Includes RC State Manager,
Configuration pull-down
menus, Run Control Status,
and Accelerator Status panels

Start Run Control:
**setup fer
rc**

(ace uses *cdfdaq* account)

Just 3 steps to run!

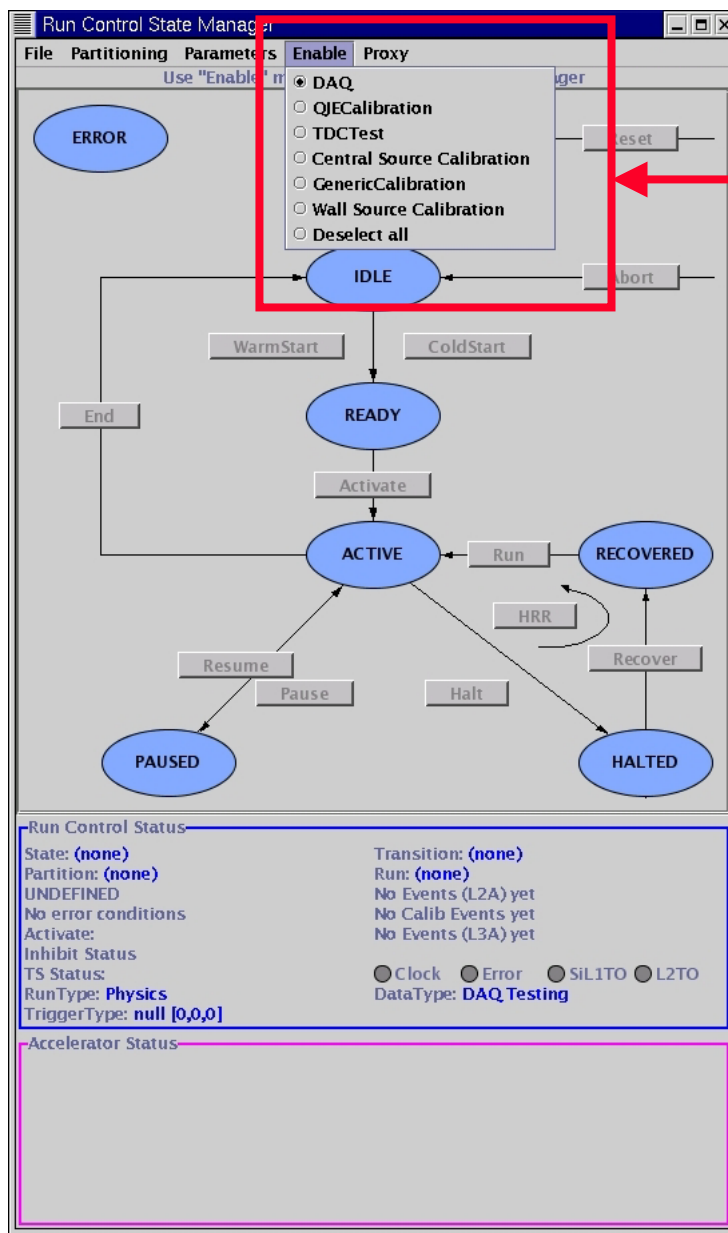
1. Select State Manager
 2. Select Partition
 3. Select Configuration
- Run!*



State Manager Selection

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Step 1



Select State Manager:

- Usually **DAQ**
- **GenericCalibration** for calibrations unless specific menu item for given run type: e.g., **QIE Calibration**
- Source, TDC testing are primarily for experts

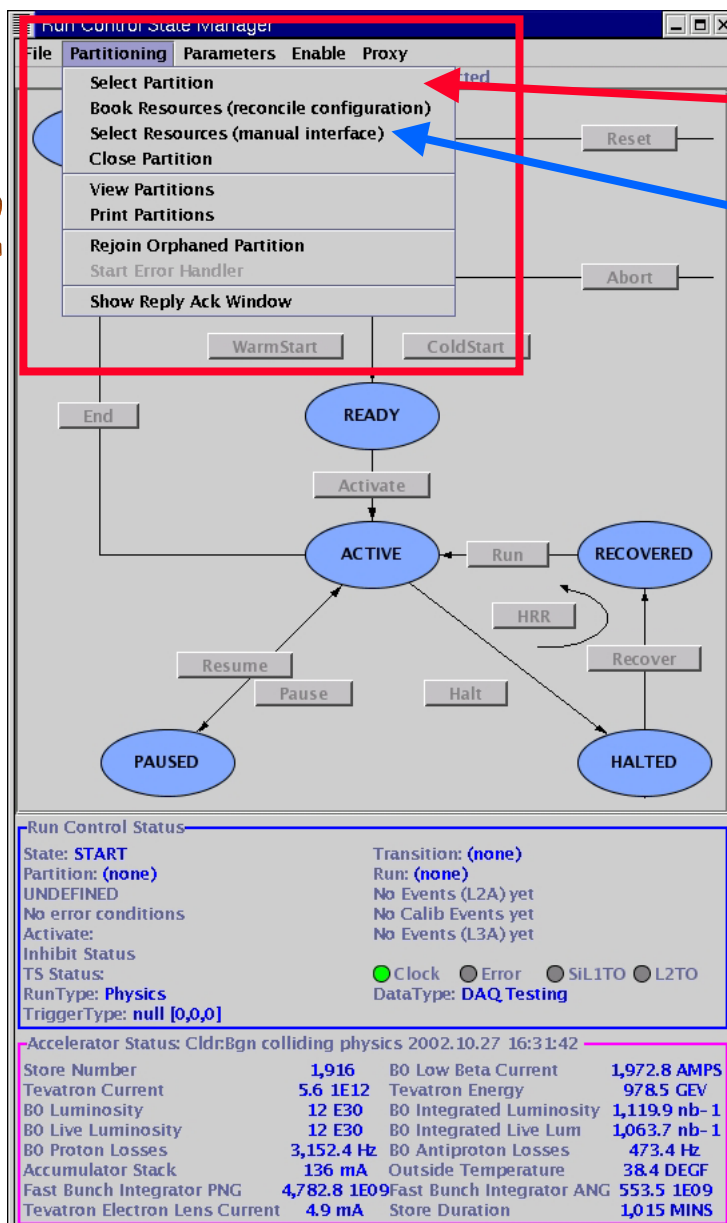
The State Manager determines the flow of control when cycling through runs



Step 2

Select Partition

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Select partition

Select or view
resources
manually (GUI)

Each Run Control Session
must be allocate a *Partition*

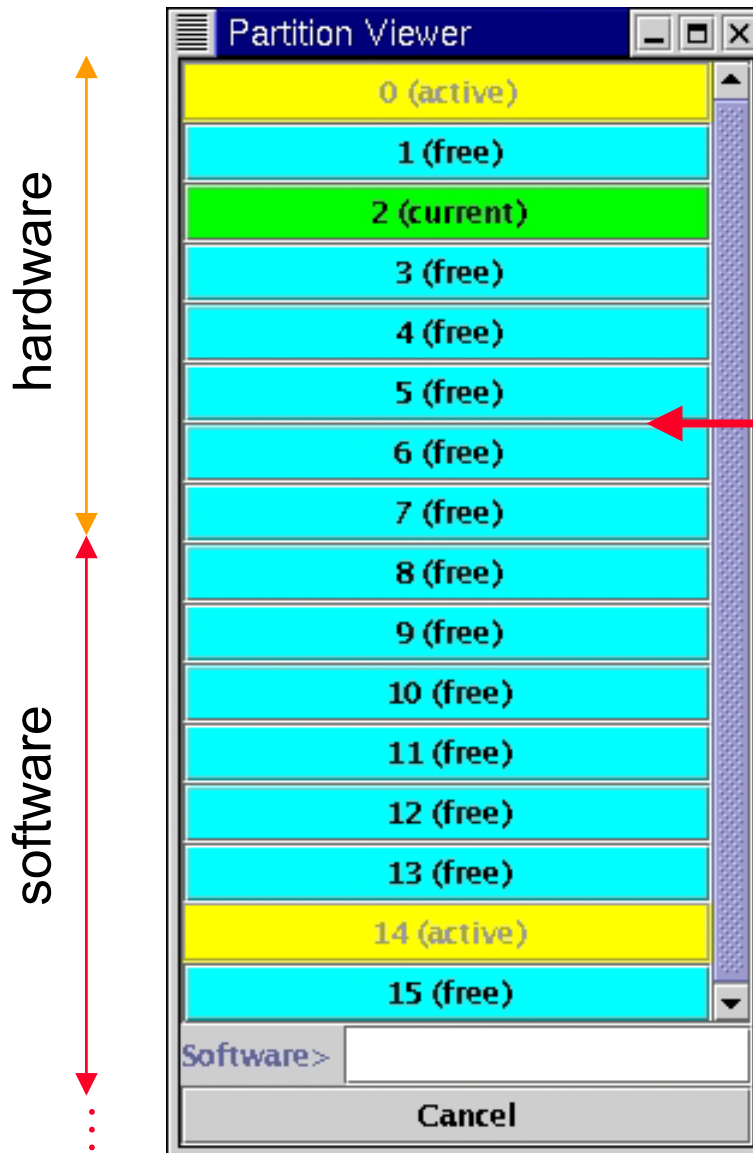
Each front end crate belongs
to no more than one *Partition*

Partitions prevent collisions
between sessions



Partition Selector

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Step 2a

Select Partition:

- Cyan is free
 - Yellow is owned by another
 - Green is yours
 - Mouse over to display owner and hardware/software status
-
- 0–7 are hardware partitions
 - 8–15 are software partitions



Resource Selector

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CDF Resource Selector Partition 4

File	Resources	Partition		
10	cdftaq	b0dap30.fnal.gov	2068	SuperAce x2080
Booked resource VRB				
Released resource VRB				
Booked resource MUTR				
Released resource MUTR				
Booked resource CLC				
Booked resource L2CL				
Active partitions:				
4	badgett	b0dap26.fnal.gov	25197	badgett
10	cdftaq	b0dap30.fnal.gov	2068	SuperAce x2080
Booked resource L2GL				

ResMgr>

CCAL	PCAL	WCAL	FCAL	COT
CALTDG	CMU	CMP	CMX	IMU
MUSC	CLC	SVX	XFT	SVT
MUTR	L1CL	L1GL	L2CL	L2GL
SCALERS	L1	L2	L3	PRESALE
VRB	INH	CALIB	TEST	

Select Resources:

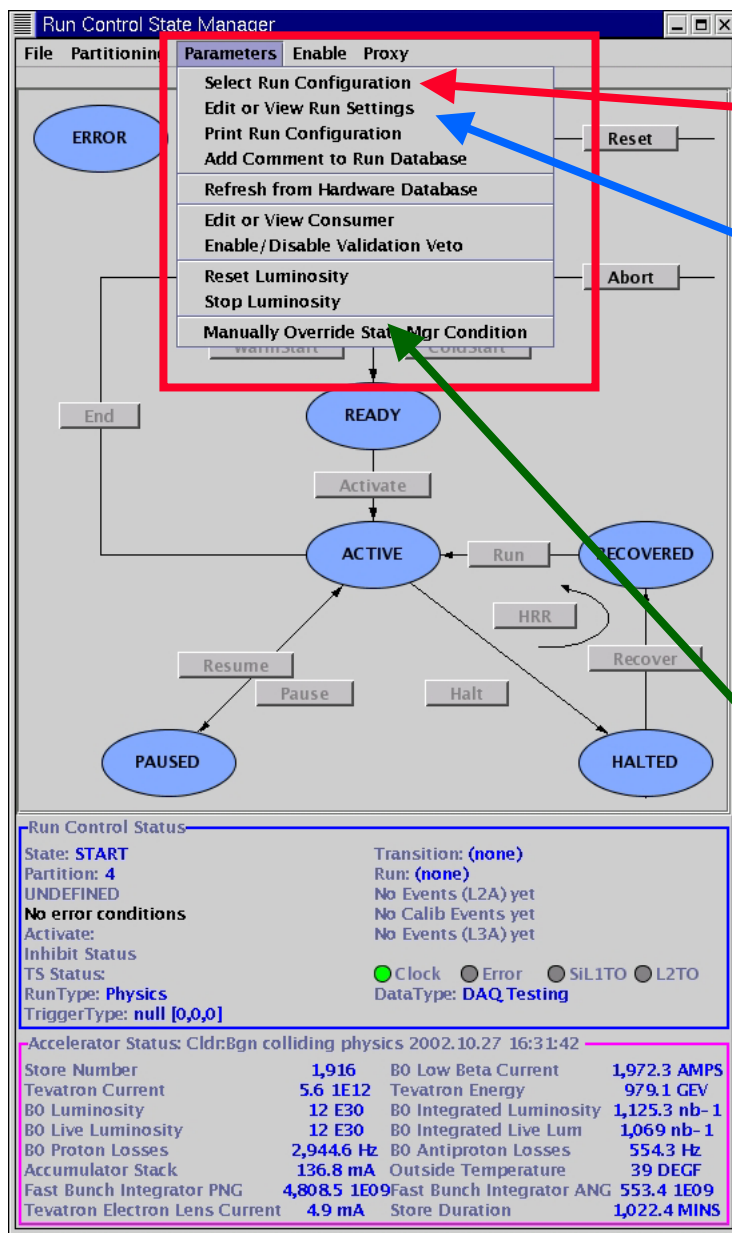
- Cyan is entirely free
- Red is entirely owned by another partition
- Blue is partially owned by another partition
- Yellow is partially yours
- Green is entirely yours
- Mouse over to display owner
- Click to book/unbook; Right-click for more info



Selecting Run Configuration

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Step 3



Select predefined run configuration

Edit or view run configuration



Frank sez:
"This is the
ace's most
important duty!"

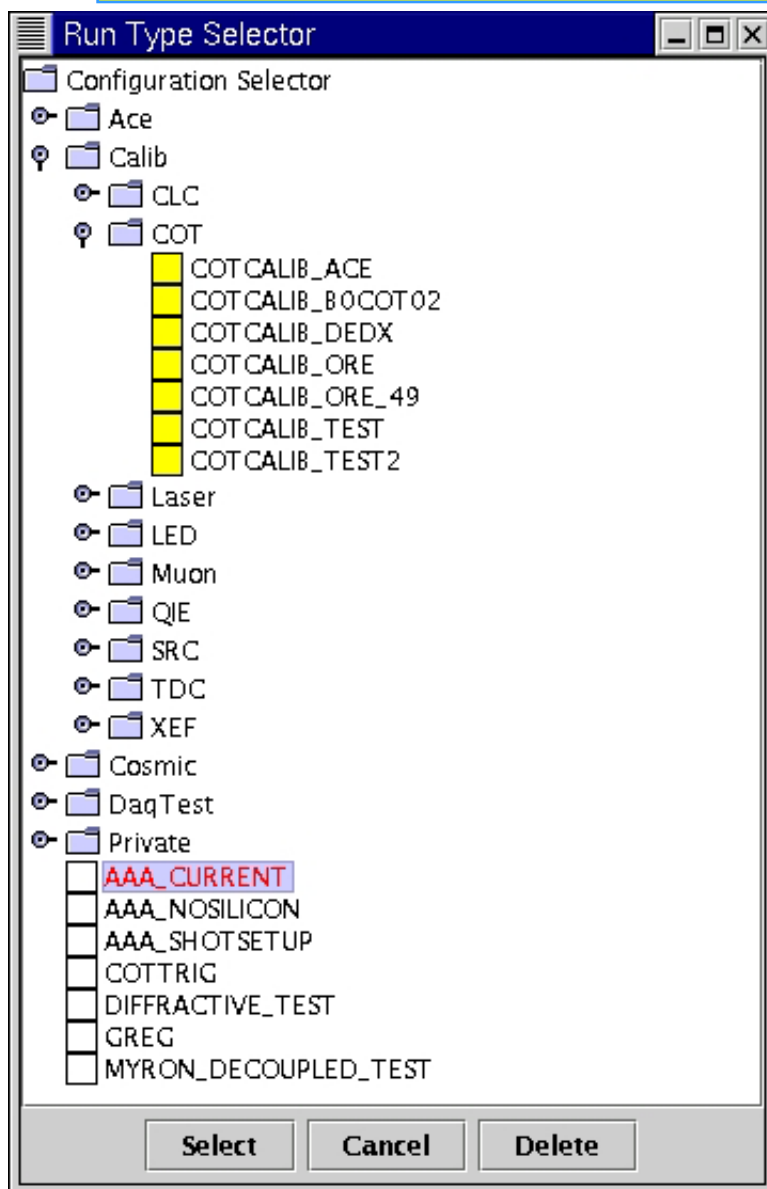
After selecting a configuration, you're ready to start a run!

Reset or stop luminosity counters at beginning and end of shot -- *only if automatic reset fails!*



Run Configuration Selector

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Select from predefined run configurations

- Ace directory contains all physics and test runs for the Ace, and is maintained by Ops Managers
- Cosmic directory for Cosmic Ray runs
- Calib directory contains calibration configurations, and is maintained by component experts in subdirectories
- Other directories for private testing purposes

Or create your own configuration!



Run Settings Window, standard

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Aces should know all options on this window

Global DAQ RunType

Trigger Table, coupled

CalorCalibSet, when
Plug source,
LED, Xenon run types

SVX Set, when SVX is used
Usually FIBTEST

Consumer Selection
(calibration run types only
for now)

Front end crate selection
Move to left to include

Run Set: AAA_CURRENT Owner: RUN_USER

File Browse Create Triggers Data Type LookArea TapeOption Inhibits

Expert:

☒ UseFred ☒ UseSrc ☒ UseScaler ☒ UseTM ☒ UseLevel3Manager ☒ UseErrorHandler

☒ UseSlowControl ☐ MyronMode ☐ L1Early ☐ IgnoreError ☐ IgnoreBusy ☐ EnableFP

☐ DisableCrates ☐ DisableL1Calib ☐ StartOnB0 ☐ SvX396Mode ☐ IgnoreBC ☐ LoadQJEFRAM

☐ LoadEtAlgo ☐ LoadEtTable ☐ LoadLatestL1 ☒ LoadDacs ☒ DacFromHdb

RunType: Physics TriggerType: PHYSICS_1_03 [2,194,329]

SvXSet: SVX_NO_PEDS CalorCalibSet: (none)

Output: ☐ Ethernet(SoftEvb) ☒ VRB(HardEvb) ☒ RunNumber ☒ DiagnosticBank ☐ ExtraDBanks

L1 Mode: ☒ Standard (Fred) ☐ Calib Fixed Period ☐ Calib External Trig ☐ Calib SVX ☐ Calib Continuous ☐ Software

L2 Mode: ☐ Auto L2 Accept ☐ Auto L2 ALT ☐ Auto L2 Reject ☒ L2 Processors

L3 SubFarms: ☐ All ☐ None

Output 1: ☒ 1 ☒ 2 Output 2: ☒ 3 ☒ 4 Output 3: ☒ 5 ☒ 6 Output 4: ☒ 7 ☒ 8 Output 5: ☒ 9 ☒ 10 Output 6: ☒ 11 ☒ 12 Output 7: ☒ 13 ☒ 14 Output 8: ☒ 15 ☒ 16

Parameter	Value
Directory	
Status	16777215
NEvents	0
RunSectionInterval	50
Iteration	0
TsCode	0
Calib Pipe	0
Calib Interval	3
Interval 0	30

Consumers

<Chosen All Choices>

Edit

<< Add <<

>> Remove >>

Crates

<Chosen All Choices>

Edit

<< Add <<

>> Remove >>

CCAL_00

CCAL_01

CCAL_02

CCAL_03

CCAL_04

CCAL_05

CCAL_06

CCAL_07

CCAL_08

CCAL_09

BEAMMON

CLCCALIB

CLCCALIB_ROOT

L3REGIONALMON

LUMMON

OBJECTMON

SILIMON

STAGE0

SVXMON

TRIMON

CAL_PULSER_01

CES_TEST_00

EM_TIMING_00

INHIBITS_00

LEVEL2_DECISION_01

PCAL_SOURCE_00

TDC_TEST_00

TEST_CAL_01

TEST_COT_01

TEST_LEVEL_01



Run Settings, Expert Options

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Run Set: AAA_CURRENT Owner: RUN_USER

File Browse Create Triggers Data Type LookArea TapeOption Inhibits CalibrationJobSet

Expert:

<input checked="" type="checkbox"/> UseFred	<input checked="" type="checkbox"/> UseSrc	<input checked="" type="checkbox"/> UseScaler	<input checked="" type="checkbox"/> UseTM	<input checked="" type="checkbox"/> UseLevel3Manager	<input checked="" type="checkbox"/> UseErrorHandler
<input checked="" type="checkbox"/> UseSlowControl	<input type="checkbox"/> MyronMode	<input type="checkbox"/> L1Early	<input type="checkbox"/> IgnoreError	<input type="checkbox"/> IgnoreBusy	<input type="checkbox"/> EnableFP
<input type="checkbox"/> DisableCrates	<input type="checkbox"/> DisableL1Calib	<input type="checkbox"/> StartOnB0	<input type="checkbox"/> SvX396Mode	<input type="checkbox"/> IgnoreBC	<input type="checkbox"/> LoadQJEFram
<input type="checkbox"/> LoadEtAlgo	<input type="checkbox"/> LoadEtTable	<input type="checkbox"/> LoadLatestL1	<input checked="" type="checkbox"/> LoadDacs	<input checked="" type="checkbox"/> DacFromHdb	

RunType: Physics TriggerType: PHYSICS_1_03 [2,194,329]

SvXSet: SVX_NO_PEDS CalorCalibSet: (none)

Output: ☐ Ethernet(SoftEvb) ☒ VRB(HardEvb) ☒ RunNumber ☒ DiagnosticBank ☐ ExtraDBanks ☐ ReadoutLists

L1 Mode: ☒ Standard (Fred) ☐ Calib Fixed Period ☐ Calib External Trig ☐ Calib SVX ☐ Calib Continuous ☐ Software

L2 Mode: ☐ Auto L2 Accept ☐ Auto L2 ALT ☐ Auto L2 Reject ☒ L2 Processors

L3 SubFarms: ☐ All ☐ None

Output 1	Output 2	Output 3	Output 4	Output 5	Output 6	Output 7	Output 8
<input checked="" type="checkbox"/> 1 <input checked="" type="checkbox"/> 2	<input checked="" type="checkbox"/> 3 <input checked="" type="checkbox"/> 4	<input checked="" type="checkbox"/> 5 <input checked="" type="checkbox"/> 6	<input checked="" type="checkbox"/> 7 <input checked="" type="checkbox"/> 8	<input checked="" type="checkbox"/> 9 <input checked="" type="checkbox"/> 10	<input checked="" type="checkbox"/> 11 <input checked="" type="checkbox"/> 12	<input checked="" type="checkbox"/> 13 <input checked="" type="checkbox"/> 14	<input checked="" type="checkbox"/> 15 <input checked="" type="checkbox"/> 16

Parameter	Value
Directory	
Status	16777215
NEvents	0
RunSectionInterval	50
Iteration	0
TsCode	0
Calib Pipe	0
Calib Interval	3
Calib Tag	

Consumers

<Chosen All Choices>

Edit

<< Add <<

>> Remove >>

Crates

<Chosen All Choices>

Edit

<< Add <<

>> Remove >>

CCAL_00

CCAL_01

CCAL_02

CCAL_03

CCAL_04

CCAL_05

CCAL_06

CCAL_07

CCAL_08

CCAL_09

BEAMMON

CLCCALIB

CLCCALIB_ROOT

L3REGIONALMON

LUMMON

OBJECTMON

SILIMON

STAGE0

SVXMON

TESTMON

CAL_PULSER_01

EM_TIMING_00

INHIBITS_00

LEVEL2_DECISION_01

PCAL_SOURCE_00

TEST_CAL_01

TEST_CES_00

TEST_COT_01

TEST_LEVEL2_01

TEST_LEVEL2_02

Expert options can be enabled from the File pull-down menu

Many expert options are triggered by the selection of other options or the addition of crates

You may be asked to take special runs, e.g. *MyronMode* with *L1Early*, or with *ReadoutLists*, which are only available in the expert options



Trigger Inhibits

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Run Set: AAA_CURRENT Owner: RUN_USER

File Browse Create Triggers Data Type LookArea TapeOption **Inhibits** CalibrationJobSet

Expert: ☒ UseFred ☒ UseSrc ☒ IgnoreInhibit ☐ UseLevel3Manager ☒ UseErrorHandler
☒ UseSlowControl ☐ MyronMode ☐ IgnoreError ☐ IgnoreBusy ☐ EnableFP
☐ DisableCrates ☐ DisableL1Calib ☐ StartOnB0 ☐ SvX396Mode ☐ IgnoreBC ☐ LoadQJEFRAM
☐ LoadEtAlgo ☐ LoadEtTable ☐ LoadLatestL1 ☒ LoadDacs ☒ DacFromHdb

RunType: Physics TriggerType: PHYSICS_1_03 [2,194,329]
SvxSet: SVX_NO_PEDS CalorCalibSet: (none)

Output: ☐ Ethernet(SoftEvb) ☒ VRB(HardEvb) ☒ RunNumber ☒ DiagnosticBank ☐ ExtraDBanks ☐ ReadoutLists

L1 Mode: ☒ Standard (Fred) ☐ Calib Fixed Period ☐ Calib External Trig ☐ Calib SVX ☐ Calib Continuous ☐ Software
L2 Mode: ☐ Auto L2 Accept ☐ Auto L2 ALT ☐ Auto L2 Reject ☒ L2 Processors

L3 SubFarms: ☐ All ☐ None

Output 1	Output 2	Output 3	Output 4	Output 5	Output 6	Output 7	Output 8
<input checked="" type="checkbox"/> 1 <input checked="" type="checkbox"/> 2	<input checked="" type="checkbox"/> 3 <input checked="" type="checkbox"/> 4	<input checked="" type="checkbox"/> 5 <input checked="" type="checkbox"/> 6	<input checked="" type="checkbox"/> 7 <input checked="" type="checkbox"/> 8	<input checked="" type="checkbox"/> 9 <input checked="" type="checkbox"/> 10	<input checked="" type="checkbox"/> 11 <input checked="" type="checkbox"/> 12	<input checked="" type="checkbox"/> 13 <input checked="" type="checkbox"/> 14	<input checked="" type="checkbox"/> 15 <input checked="" type="checkbox"/> 16

Parameter	Value
Directory	
Status	16777215
NEvents	0
RunSectionInterval	50
Iteration	0
TsCode	0
CalibPipe	0
CalibInterval	3
CalibTag	

Consumers	Crates
<Chosen> All Choices>	<Chosen> All Choices>
Edit	Edit
<< Add <<	<< Add <<
>> Remove >>	>> Remove >>
BEAMMON	<input type="checkbox"/> CAL_PULSER_01
CLCCALIB	<input type="checkbox"/> EM_TIMING_00
CLCCALIB_ROOT	<input type="checkbox"/> INHIBITS_00
L3REGIONALMON	<input type="checkbox"/> LEVEL2_DECISION_01
LUMMON	<input type="checkbox"/> PCAL_SOURCE_00
OBJECTMON	<input type="checkbox"/> TEST_CAL_01
SILIMON	<input type="checkbox"/> TEST_CES_00
STAGE0	<input type="checkbox"/> TEST_COT_01
SVXMON	<input type="checkbox"/> TEST_LEVEL2_01
TRIGMON	<input type="checkbox"/> TEST_LEVEL2_02

CCAL_00
CCAL_01
CCAL_02
CCAL_03
CCAL_04
CCAL_05
CCAL_06
CCAL_07
CCAL_08

Inhibits normally used only during physics (colliding beam) runs, otherwise set Ignore Inhibit to true

Inhibit sources are tied to the crates and components you have chosen, and are selected automatically

In an emergency, you may have to disable misbehaving inhibit signals

Inhibits cause data taking to stop, watch event rates and Inhibit LEDS



Trigger Inhibit Disable Masking

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Trigger Inhibit Disable

Selection for Disabling Trigger Inhibit Inputs
A checked box DISABLES the inhibit function for that component

<input type="checkbox"/> BFLD	<input type="checkbox"/> CCAL	<input type="checkbox"/> CLC	<input checked="" type="checkbox"/> CMU	<input type="checkbox"/> COT
<input type="checkbox"/> IMU	<input type="checkbox"/> ISL	<input type="checkbox"/> L00	<input type="checkbox"/> PCAL	<input type="checkbox"/> RACKS
<input type="checkbox"/> SVX	<input type="checkbox"/> TEV	<input type="checkbox"/> TOF	<input checked="" type="checkbox"/> VME	

Accept Cancel

Greyed options are not yet working and do not contribute to inhibits

Select which components should be **disabled** from providing an inhibit signal

Jonatron sez:
"Selecting the Inhibitions is the Ace's most important duty!"



Inhibit system will be revamped eventually...

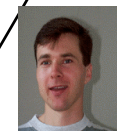


Pull-down menu in Run Settings window selects data types

Select *Beam Data* only
when colliding beams are
in the Tevatron

Use DAQ Testing when just exercising the system

Tony sez:
“Selecting the Data
Type is the Ace’s
most important
Duty”





Data Output Control

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Run Set: AAA_CURRENT Owner: RUN_USER

File Browse Create Triggers Data Type LookArea TapeOption Inhibits

Expert: ☒ UseFred ☒ UseSlowControl ☐ MyronMod ☐ DisableCrates ☐ LoadEtAlgo ☐ Use ☐ MyronMod ☐ DisableL1Calib ☐ LoadEtTable ☐ StartOnB0 ☐ LoadLatestL1 ☐ UseTM ☐ IgnoreError ☐ SvX396Mode ☒ LoadDacs ☒ UseLevel3Manager ☐ IgnoreBusy ☐ IgnoreBC ☒ UseErrorHandler ☐ EnableFP ☐ LoadQJEFram

RunType: Physics TriggerType: PHYSICS_1_03 [2,194,329]

SvxSet: SVX_NO_PEDS CalorCalibSet: (none)

Output: ☐ Ethernet(SoftEvb) ☒ VRB(HardEvb) ☒ RunNumber ☒ DiagnosticBank ☐ ExtraDBanks

L1 Mode: ☒ Standard (Fred) ☐ Calib Fixed Period ☐ Calib External Trig ☐ Calib SVX ☐ Calib Continuous ☐ Software

L2 Mode: ☐ Auto L2 Accept ☐ Auto L2 ALT ☐ Auto L2 Reject ☒ L2 Processors

L3 SubFarms: ☐ All ☐ None

Output 1: ☒ 1 ☒ 2 Output 2: ☒ 3 ☒ 4 Output 3: ☒ 5 ☒ 6 Output 4: ☒ 7 ☒ 8 Output 5: ☒ 9 ☒ 10 Output 6: ☒ 11 ☒ 12 Output 7: ☒ 13 ☒ 14 Output 8: ☒ 15 ☒ 16

Parameter	Value
Directory	
Status	16777215
NEvents	0
RunSectionInterval	50
Iteration	0
TsCode	0
Calib Pipe	0
CalibInterval	3
Interval 0	30

Consumers

<Chosen All Choices>

Edit

<< Add <<

>> Remove >>

Crates

<Chosen All Choices>

Edit

<< Add <<

>> Remove >>

CCAL_00 CCAL_01 CCAL_02 CCAL_03 CCAL_04 CCAL_05 CCAL_06 CCAL_07 CCAL_08

BEAMMON CLCCALIB CLCCALIB_ROOT L3REGIONALMON LUMMON OBJECTMON SILIMON STAGE0 SVXMON TESTMON

CAL_PULSER_01 CES_TEST_00 EM_TIMING_00 INHIBITS_00 LEVEL2_DECISION_01 PCAL_SOURCE_00 TDC_TEST_00 TEST_CAL_01 TEST_COT_01 TEST_LEVEL2_01

TapeOption:

- How much data goes to tape
- Normally **Default**
- Except special runs request

LookArea:

- How much data goes to disk
- Normally **Default**
- Special runs may have different setting



Trigger Type Selection

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Select *coupled*
Trigger Table here
for normal physics
running

Select decoupled
tables here for
testing purposes

Coupled tables
are fully
specified from
Level 1, Level 2
through Level 3

Synonyms:
TriggerType =
TriggerTable =
PhysicsTable

15

Run Set: AAA_CURRENT Owner: RUN_USER

File Browse Create Triggers Data Type LookArea TapeOption Inhibits

Expert: ☒ List L2 Tag Sets ☒ UseTM ☒ UseLevel3Manager ☒ UseErrorHandler
☒ List L3 Tag Sets ☐ IgnoreError ☐ IgnoreBusy ☐ EnableFP
☐ Level 1,2 Special Trigger Types (decoupled from L3) ☐ Svx396Mode ☐ IgnoreBC ☐ LoadQJEFRAM
☐ DisableCrates ☐ DisableL1Calib ☐ StartOnB0 ☒ LoadDacs ☒ DacFromHdb
☐ LoadAlgo ☐ LoadEtTable ☐ LoadLatestL1

RunType: Physics TriggerType: PHYSICS_1_03 [2,194,329]
SvxSet: SVX_NO_PEDS CalorCalibSet: (none)

Output: ☐ Ethernet(SoftEvb) ☒ VRB(HardEvb) ☒ RunNumber ☒ DiagnosticBank ☐ ExtraDBanks

L1 Mode: ☒ Standard (Fred) ☐ Calib Fixed Period ☐ Calib External Trig ☐ Calib SVX ☐ Calib Continuous ☐ Software
L2 Mode: ☐ Auto L2 Accept ☐ Auto L2 ALT ☐ Auto L2 Reject ☒ L2 Processors

L3 SubFarms: ☐ All ☐ None

Output 1	Output 2	Output 3	Output 4	Output 5	Output 6	Output 7	Output 8
<input checked="" type="checkbox"/> 1 <input checked="" type="checkbox"/> 2	<input checked="" type="checkbox"/> 3 <input checked="" type="checkbox"/> 4	<input checked="" type="checkbox"/> 5 <input checked="" type="checkbox"/> 6	<input checked="" type="checkbox"/> 7 <input checked="" type="checkbox"/> 8	<input checked="" type="checkbox"/> 9 <input checked="" type="checkbox"/> 10	<input checked="" type="checkbox"/> 11 <input checked="" type="checkbox"/> 12	<input checked="" type="checkbox"/> 13 <input checked="" type="checkbox"/> 14	<input checked="" type="checkbox"/> 15 <input checked="" type="checkbox"/> 16

Parameter	Value
Directory	
Status	16777215
NEvents	0
RunSectionInterval	50
Iteration	0
TsCode	0
Calib Pipe	0
Calib Interval	3
Interval 0	30

Consumers	
<Chosen>	All Choices>
Edit	
<< Add <<	
>> Remove >>	
BEAMMON CLCCALIB CLCCALIB_ROOT L3REGIONALMON LUMMON OBJECTMON SILIMON STAGE0 SVXMON TRIGMON	

Crates	
<Chosen>	All Choices>
Edit	
<< Add <<	
>> Remove >>	
<input type="checkbox"/> CAL_PULSER_01 <input type="checkbox"/> CES_TEST_00 <input type="checkbox"/> EM_TIMING_00 <input type="checkbox"/> INHIBITS_00 <input type="checkbox"/> LEVEL2_DECISION_01 <input type="checkbox"/> PCAL_SOURCE_00 <input type="checkbox"/> TDC_TEST_00 <input type="checkbox"/> TEST_CAL_01 <input type="checkbox"/> TEST_COT_01 <input type="checkbox"/> TEST_LEVEL2_01	

CCAL_00
CCAL_01
CCAL_02
CCAL_03
CCAL_04
CCAL_05
CCAL_06
CCAL_07
CCAL_08



Decoupled Trigger Tables

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Trigger Type Selector

Select a single row of parameters from the list of choices below

PHYSICSTABLE	TAG	L2	L3	DESCRIPTION	CREATED
COSMICS_TEST_L2INCLUSIVE	3	189	327	NULL v2 replacment	2002.09.11
COSMICS_TEST_L2INCLUSIVE	3	189	318	L3_PASS_ALL_RECO v9	2002.09.11
COSMICS_TEST_L2INCLUSIVE	3	189	316	L3_TEST_ALL_RECO_471 all reco test table	2002.09.11
COSMICS_TEST_L2INCLUSIVE	3	189	311	NULL version 2 built from 4.7.1	2002.09.11
DIFFRACTIVE_TEST_NOSPIKES	5	182	327	NULL v2 replacment	2002.08.30
DIFFRACTIVE_TEST_NOSPIKES	5	182	318	L3_PASS_ALL_RECO v9	2002.08.30
DIFFRACTIVE_TEST_NOSPIKES	5	182	316	L3_TEST_ALL_RECO_471 all reco test table	2002.08.30
DIFFRACTIVE_TEST_NOSPIKES	5	182	311	NULL version 2 built from 4.7.1	2002.08.30
L2_TEST_NEW_ALGORITHMS_NOS...	4	183	327	NULL v2 replacment	2002.10.10
L2_TEST_NEW_ALGORITHMS_NOS...	4	183	318	L3_PASS_ALL_RECO v9	2002.10.10
L2_TEST_NEW_ALGORITHMS_NOS...	4	183	316	L3_TEST_ALL_RECO_471 all reco test table	2002.10.10
L2_TEST_NEW_ALGORITHMS_NOS...	4	183	311	NULL version 2 built from 4.7.1	2002.10.10
L2_TEST_NEW_ALGORITHMS_NOS...	4	179	327	NULL v2 replacment	2002.10.10

Select None Cancel

Lots of *decoupled* trigger table options, due to combinatorics of unspecified Level 3 paths

None is a valid option when using the calibration trigger



Kirsten sez:
"Selecting the Level 3 TagSet is the Ace's most important duty!"



Coupled Trigger Tables

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Trigger Type Selector

Select a single row of parameters from the list of choices below

PHYSICSTABLE	TAG	L2	L3	DESCRIPTION	CREATED
PHYSICS_1_03	2	194	329	standard physics table	2002.10.20
PHYSICS_1_03	2	193	329	standard physics table	2002.10.20
PHYSICS_1_03	2	192	329	standard physics table	2002.10.20
PHYSICS_I_1_03	1	199	330	like PHYSICS_1_03[2,...], but with the inclusive stream for...	2002.10.24
PHYSICS_TEST_1_03	8	191	328	Physics_1_03 v8	2002.10.20

Coupled Trigger Tables are used for real physics (colliding beams) running

Select None Cancel

Your Ops Manager will tell you which one to use and which are for special test runs

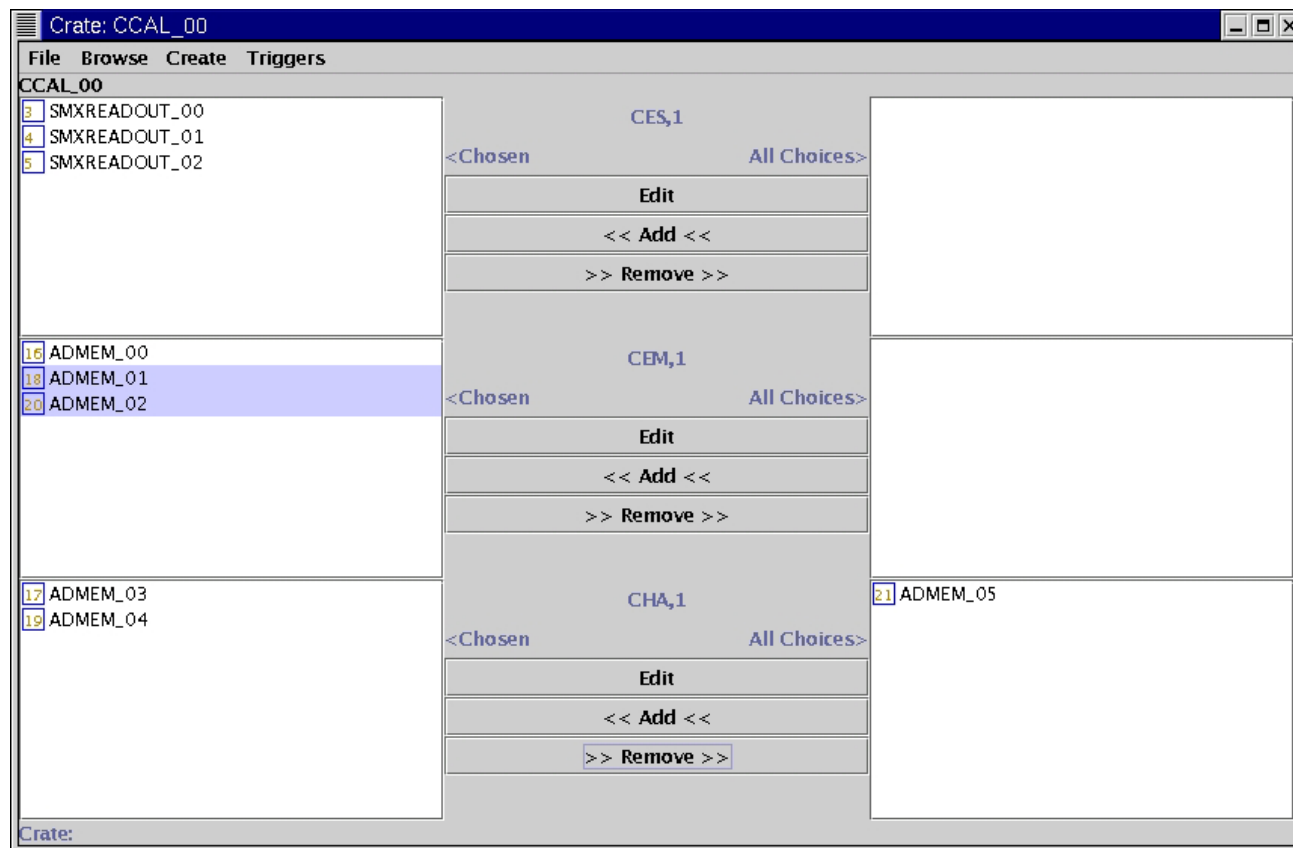


Greg Sez: "Selecting the correct Trigger Table is the Ace's most important duty!" (plus bringing Greg Krispy Kreme doughnuts)



Crate Editor

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CrateEditor shows
which cards will be
read out, grouped
by bank

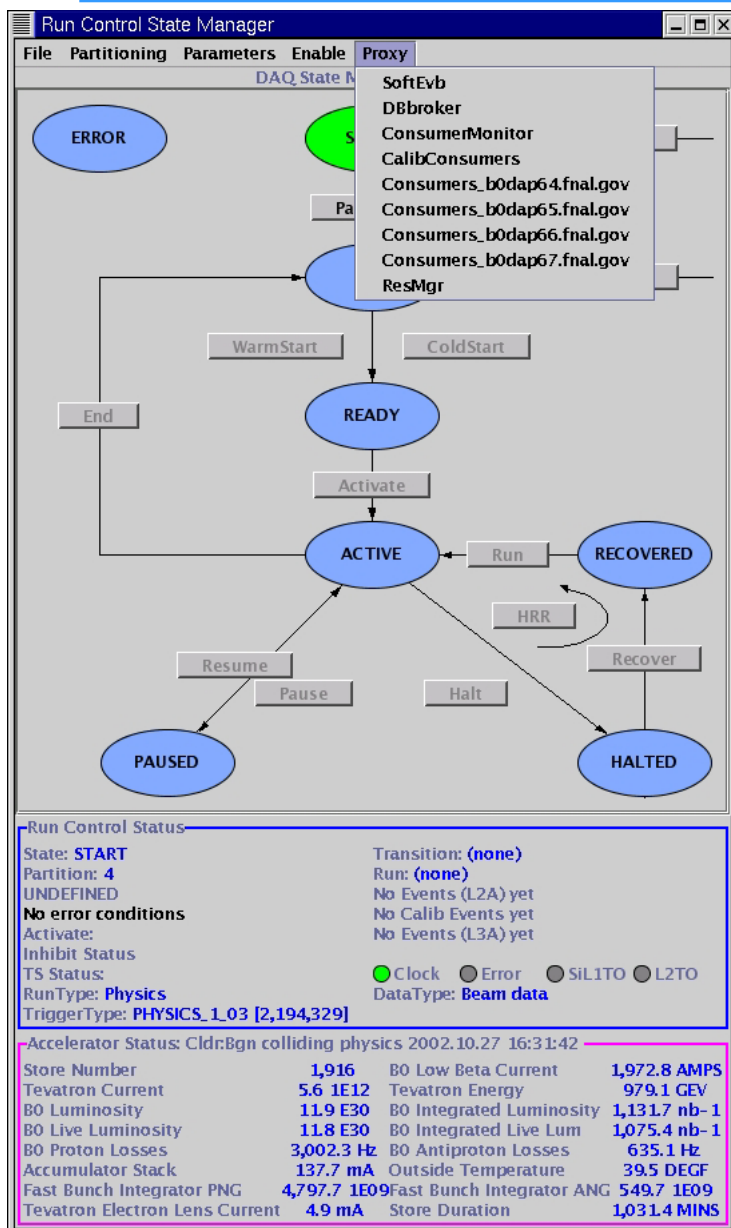
Cards can be
removed from
readout, but
only in
emergencies
Notify expert
immediately if
you remove a
card!

Component expert? Select card and press *Edit* for
more info on the card
Use caution when changed database connection



Proxy Control Menu

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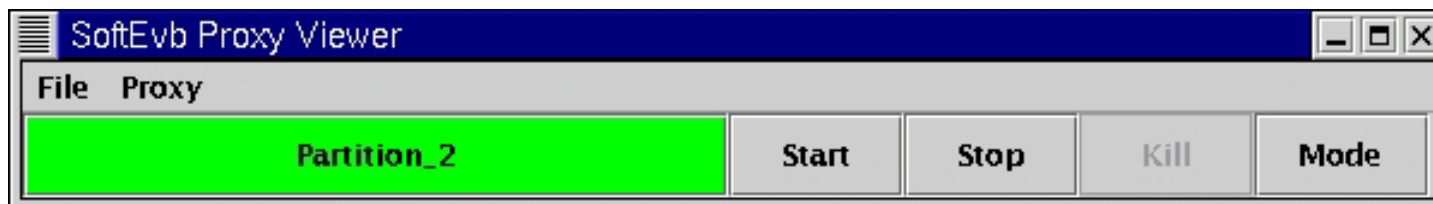
The Proxy gives you control over remote data acquisition processes:

- Software Event Builder
- Database Broker (for SVX)
- Consumer Monitor
- Calibration Consumers
- Resource Manager
- Physics Consumers (to be implemented)



SoftEvb Proxy Viewer

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If you don't get responses from the Software Event Builder during transitions, then check the SoftEvb Proxy, and stop and/or restart if needed

Status colors:

- Green: Up and running
- Cyan: not running

Click on main button for detailed information



CalibConsumer Proxy

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Run Control &
Run Configuration
09-Apr-2003

A screenshot of a software window titled "CalibConsumers Proxy Viewer". The window has a menu bar with "File" and "Proxy". Below the menu bar is a table with 10 rows and 5 columns. The first column contains consumer names, and the other four columns contain "Start", "Stop", "Kill", and "Mode" buttons. The "CESCALIB_0" row is highlighted in green, and its "Start" button is selected. The other rows have a cyan background.

File	Proxy				
	QJE_0	Start	Stop	Kill	Mode
	CESCALIB_0	Start	Stop	Kill	Mode
	BSCQJE_0	Start	Stop	Kill	Mode
	QJEMINIPLUG_0	Start	Stop	Kill	Mode
	POTQJE_0	Start	Stop	Kill	Mode
	COTCTT_0	Start	Stop	Kill	Mode
	TOFQJE_0	Start	Stop	Kill	Mode
	LED_0	Start	Stop	Kill	Mode
	XEF_0	Start	Stop	Kill	Mode

Use the Calibration Consumer Proxy to see if your calibration consumer is still running



Resource Manager Proxy

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09-Apr-2003

The image shows a screenshot of a software window titled "ResMgr Proxy Viewer". The window has a menu bar with "File" and "Proxy" options. Below the menu bar is a table with 11 rows and 5 columns. The first column contains the names of the resource managers, and the other four columns contain buttons for "Start", "Stop", "Kill", and "Mode". The rows are: ResMgr_Prd, ResMgr_Int, ResMgr_Dev, DBMon_Prd, DBMon_Int, DBMon_Dev, DBMon_OffPrd, HMon_Prd, HMon_Int, HMon_Dev, and SVX_BootLoader. The "ResMgr_Prd" and "SVX_BootLoader" rows are highlighted in green, while the others are highlighted in cyan.

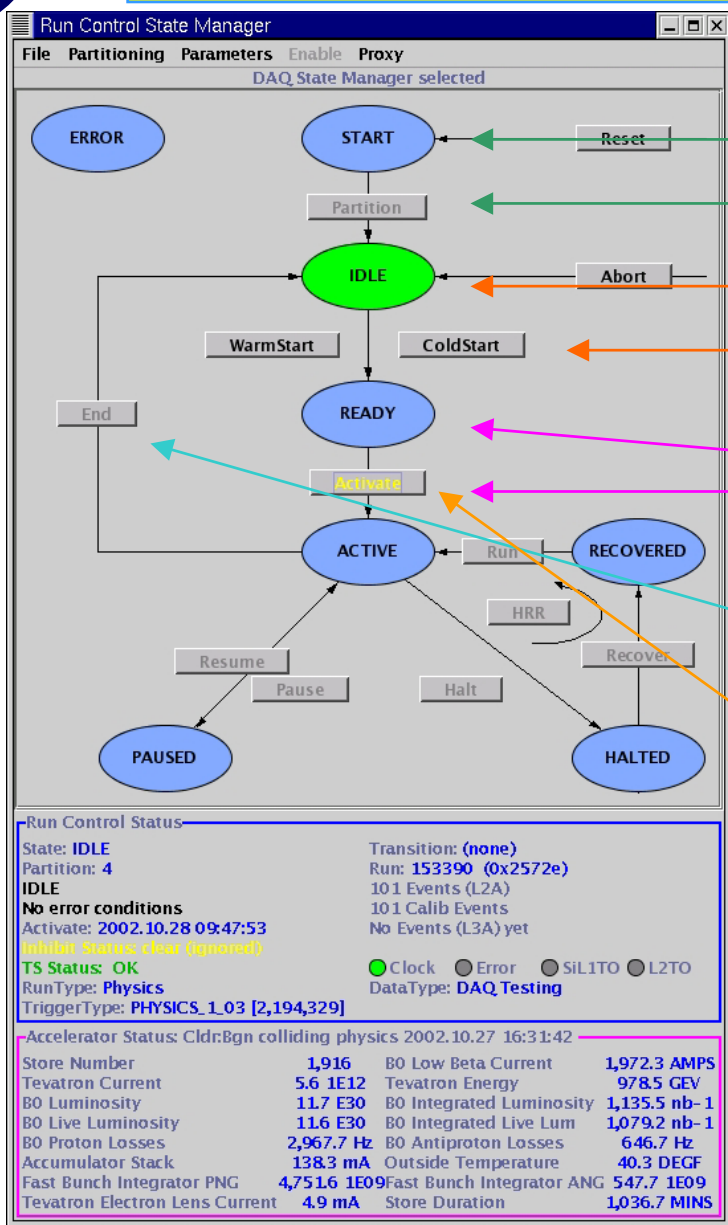
File	Proxy	Start	Stop	Kill	Mode
ResMgr_Prd		Start	Stop	Kill	Mode
ResMgr_Int		Start	Stop	Kill	Mode
ResMgr_Dev		Start	Stop	Kill	Mode
DBMon_Prd		Start	Stop	Kill	Mode
DBMon_Int		Start	Stop	Kill	Mode
DBMon_Dev		Start	Stop	Kill	Mode
DBMon_OffPrd		Start	Stop	Kill	Mode
HMon_Prd		Start	Stop	Kill	Mode
HMon_Int		Start	Stop	Kill	Mode
HMon_Dev		Start	Stop	Kill	Mode
SVX_BootLoader		Start	Stop	Kill	Mode

Having a problem with Sticky Partitions?
Try restarting the ResMgr_Prd
You can't hurt anything!



Transition Sequencing

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At *Start* state, select all desired clients and *Partition*

At *Idle* state, configuration must be fixed, then *ColdStart*

At *Ready* state, *Activate*

When *Active* and ready to finish run, ***End***
To fix timeouts, try ***Halt Recover Run***

Note use of *click-ahead* (shift key plus mouse click) so that *Activate* will automagically engage when it becomes available

***Abort* and *Reset* always available to get you out of sticky situations**
Use sparingly!



Transitions

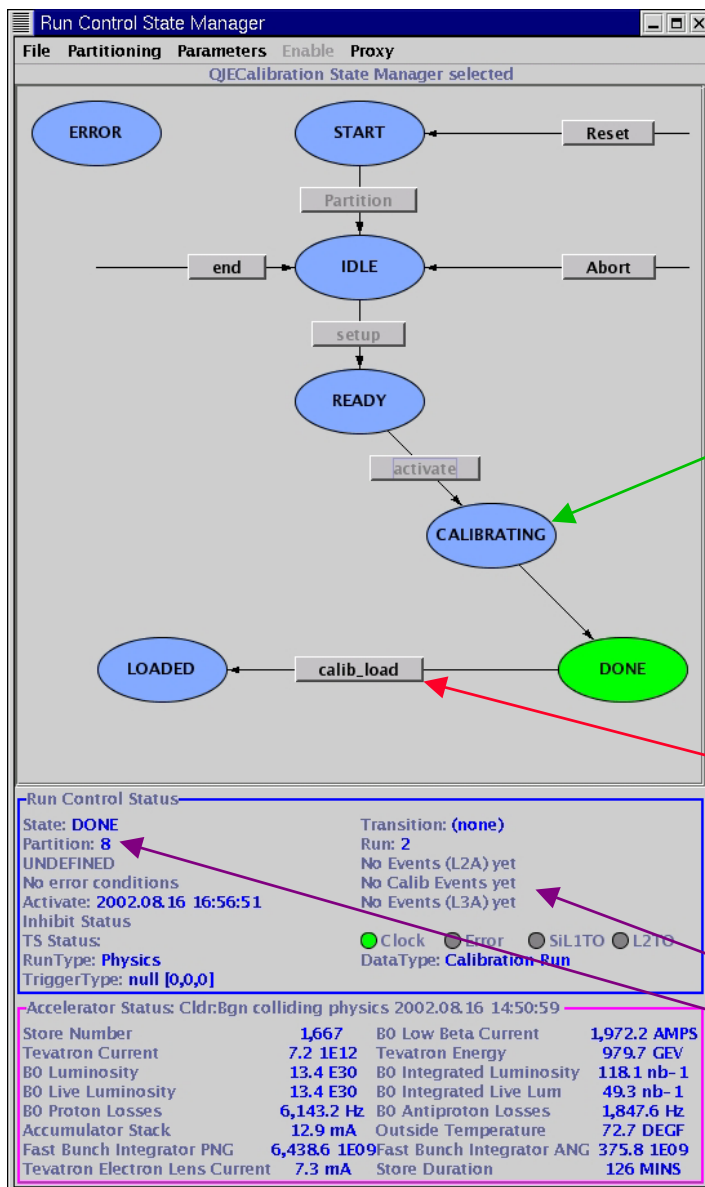
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- **Partition**: Select front end crates and clients for the run; configure trigger and return crosspoints
- **WarmStart/ColdStart**: Configure crates and clients with info that could change run by run (slow)
 - **ColdStart**: Full download (when in doubt, ColdStart)
 - **WarmStart**: Selected clients do limited download when no changes
- **Activate**: Final step to enable system to take data (fast)
- **End**: Normal end of run, produces end of run summaries
- **Abort**: Return to Idle when no other option available
- **Pause**: Briefly stop data taking (HV trips, flying wires, inhibits)
- **Halt/Recover/Run**: Fast system error recovery



Calibration State Managers

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QIE Calibration State Manager

Calibrating: Transitory state, will drop to Done when all front end crates are complete

Know where Calibration Consumer log files are kept:
~cdfdaq/consumers/log

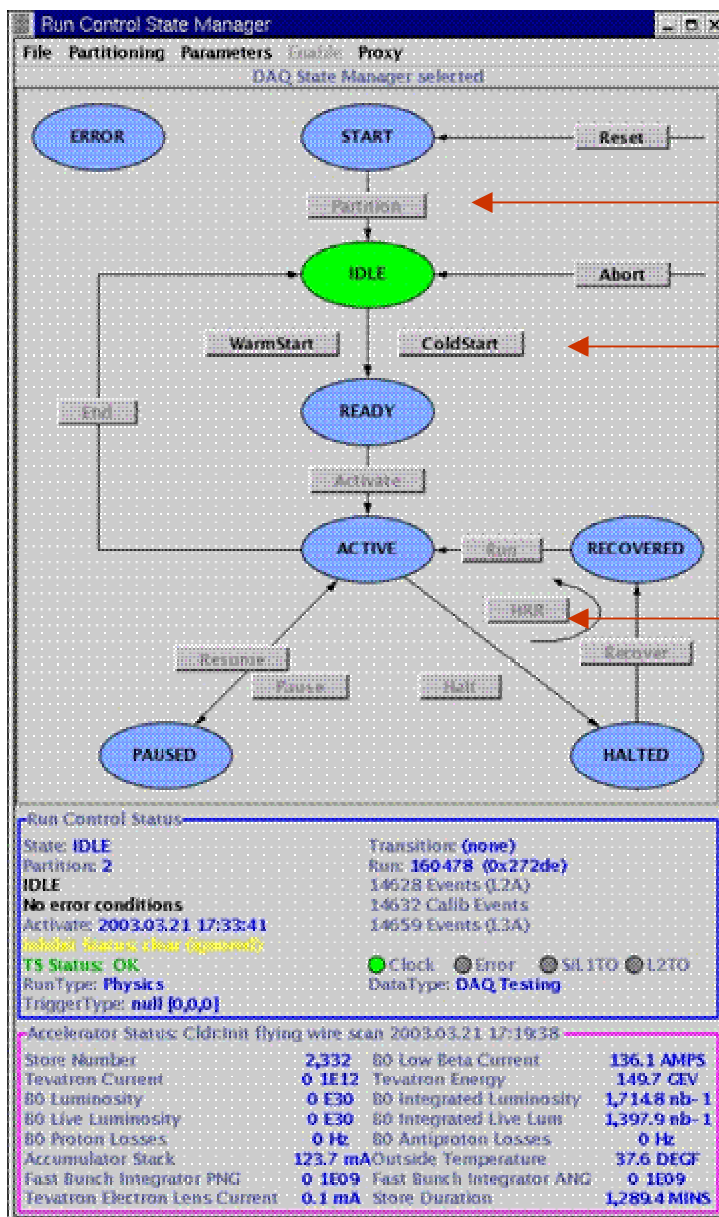
CalibLoad special option to do full download of AdMem FRAMs, by expert request only

QIE Calibration may be done in software partition, no hardware triggers are generated



RunControl in action

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Partition: choose front end crates and other virtual clients to participate in the run

Start: configure hardware and software for desired run type

HaltRecoverRun: quickly reset the entire DAQ and trigger system for fast recovery, minimize dead time

StateManager

- User initiates *transitions* between different *states*
- Goal is to stay in the *Active* state until run is complete, taking recovery actions as necessary



Sample Transition Errors

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```
*** Run Configuration Invalid ***  
File  
Strange (but not necessarily fatal) Run Configuration  
CSL Host b0dau32, not the suggested b0dap60  
for RunType QIE Calibration  
DataType is Beam data [1], but Calibration Run [3] ex  
Crate CCAL_00 missing from run  
Crate CCAL_01 missing from run  
Crate CCAL_02 missing from run  
Crate CCAL_03 missing from run  
Crate CCAL_04 missing from run  
Crate CCAL_05 missing from run  
Crate CCAL_06 missing from run  
Crate CCAL_07 missing from run  
Crate CCAL_08 missing from run  
Crate CCAL_09 missing from run  
Crate CCAL_10 missing from run  
Crate CCAL_11 missing from run  
Crate CCAL_12 missing from run  
Crate CCAL_13 missing from run  
Crate CCAL_14 missing from run  
Crate CCAL_15 missing from run  
Crate CLC_00 missing from run  
Crate CLC_01 missing from run  
Crate CMP_00 missing from run  
Crate CMU_00 missing from run  
Crate CMU_01 missing from run  
Crate COT_00 missing from run  
Crate COT_01 missing from run
```

During your Run Control session, you will sometimes see warning messages pop up
This example tells you are missing some important crates during a beam physics run

Do **NOT** ignore
any of these
messages!!!

If you do not
understand a message,
contact the appropriate
expert immediately



Reply & Acknowledgments Window

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Partition 2:	
b0tsi00	b0puls01
b0tsi02	b0tsi01
errlog	csl
slow	sevb

Window should
always be visible

Words too small to read?
Stretch the window!

This window indicates the transition status of clients:

- Butter yellow: RC has not sent transition
- Margarine yellow: RC has send transition, waiting for acknowledgment
- Green: Client sent successful acknowledgment
- Red: Client sent error

Click on the client button for more info and the client's
Local Controller



Local Client Controller

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CAL_PULSER_01 Local Client Controller

File

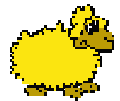
Press button to issue a local transition

Partition	Subject: /frontEnd/cal/pulser/00
ColdStart	Name: CAL_PULSER_01
Activate	SentMessage: true
End	HasResponded: true
Abort	WasSuccessful: true
Reset	IgnoreState: false
Pause	IgnoreReply: false
Resume	Last Command: 2003.03.22 07:33:14
Halt	Last Reply: 2003.03.22 07:33:15
Recover	Latency: 00:00:00.11 (0.11)
Run	Last Result: SUCCESS
VmeBusScan	Last Transition: Activate
FrontEndConsole	Actual State: ACTIVE
Reboot, Reset and Recover Crate	Target State: ACTIVE
	Local Target: ACTIVE
	Crate: CAL_PULSER_01 (b0puls01)
	Description: Cal Pulser Crate
	Rack Position: 1RR18D-2
	Tracer Slot: 2
	Conditions: (clear)
	ACTIVE

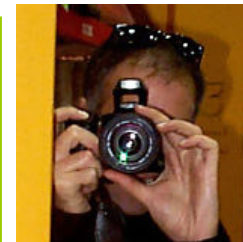
Transitions require confirmation

File menu gives you access to the contents of the configuration messages sent to the client

One-Touch shepherding: reset and bring crate back into line with other Run Control clients



Allows you to **shepherd** individual clients through the transitions
Can be used if one client out of many fail a transition
Be careful to retain the same configuration!!



Avi sez: "We need a mouse click database!"



VmeBusScan Button

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Run Configuration
09-Apr-2003

```
b0wcal00 VmeBusScan
File
VmeBusScan message
PartitionId:      2
IpAddress:        131.225.237.108
Ethernet:         08:00:3e:27:c0:ad
SystemNumber:
Slot: 2  Id: 0097 001 TRACER_V2.1A
Slot: 5  Id: 0237 003 ADMEM_V4.0      470
Slot: 6  Id: 0366 003 ADMEM_V4.0      460
Slot: 7  Id: 0179 003 ADMEM_V4.0      470
Slot: 8  Id: 0087 003 ADMEM_V4.0      470
Slot: 9  Id: 0364 003 ADMEM_V4.0      460
Slot: 10 Id: 0202 003 ADMEM_V4.0      460
Slot: 16 Id: 0207 003 ADMEM_V4.0      470
Slot: 17 Id: 0090 003 ADMEM_V4.0      470
Slot: 18 Id: 0111 003 ADMEM_V4.0      470
Slot: 19 Id: 0165 003 ADMEM_V4.0      470
Slot: 20 Id: 0128 003 ADMEM_V4.0      470
Slot: 21 Id: 0121 003 ADMEM_V4.0      470
```

Choosing VmeBusScan
from the Local Controller
window returns a scan of all
cards in the front end crate

Useful for verifying the
presence and basic
functionality of readout
cards



End of Run Status Box

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Run Configuration
09-Apr-2003

A screenshot of the 'End of Run Status Box' window. The window has a title bar 'Run Comments' and a 'File' menu. The main text area contains the prompt 'Enter your name and pertinent Run informations, purpose and conditions' followed by the text 'Test run only.' and 'No colliding beams during run; no need to process run on production farm'. Below the text area are three input fields: 'Run:' with the value '141700', 'Name:' with the value 'badgett', and 'State:' with the value 'TERMINATE'. To the right of these fields are two buttons: 'Enter' and 'Close'. At the bottom, there is a 'Run Status' section with two radio buttons: 'Potentially Useful, send to offline farms' (unchecked) and 'Definitely Bad, do not send to farms' (checked). The 'Definitely Bad' option is highlighted with a red border, and the 'Potentially Useful' option is highlighted with a green border.

Run Comments

File

Enter your name and pertinent Run informations, purpose and conditions

Test run only.
No colliding beams during run; no need to process run on production farm

Run: 141700 Name: badgett State: TERMINATE Enter Close

Run Status ☐ Potentially Useful, send to offline farms ☒ Definitely Bad, do not send to farms

At the end of a run you will be presented with a comment box: enter any pertinent run informations

At the end of a beam physics run, you must also decide the basic run quality. When in doubt, choose *Potentially Good*
Determines whether run is processed offline!



Error Logger

W. Badgett
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09-Apr-2003

The screenshot shows a window titled "Error Display (current version = v1_05_1)". It has a menu bar with "File", "Log", "Options", "Tools", and "Help". Below the menu bar are buttons for "Stop log file" and "Clear". The main text area displays the following log output:

```
ColdStart DAQ badgett@b0dap13.fnal.gov 11:36:51 run #: 141704 (0x22988)
readout sent events mismatch[EOR]
(EOR) SoftEvB: 160 started, 160 completed, 160 assembled, 160 dispatched, 0 timed o
(EOR) SoftEvB: 1440 valid, 0 missing, 0 repeated, 0 invalid, 0 discarded, 0 early, 0 late s
(EOR) CSL: Normal end; 160 events received, 160 sent to loggers, 160 logged.
(EOR) CSL: stream 0, 0 events received, 0 events logged.
(EOR) CSL: stream 1, 0 events received, 0 events logged.
(EOR) CSL: stream 2, 0 events received, 0 events logged.
(EOR) CSL: stream 3, 0 events received, 0 events logged.
(EOR) CSL: stream 4, 0 events received, 0 events logged.
(EOR) CSL: stream 5, 0 events received, 0 events logged.
(EOR) CSL: stream 6, 0 events received, 0 events logged.
(EOR) CSL: stream 7, 0 events received, 0 events logged.
(EOR) CSL: stream 8, 160 events received, 160 events logged.
(EOR) CSL: stream 9, 0 events received, 0 events logged.
(EOR) End of Run System Summary
(EOR) FE (ts trigg. ev.) SoftEvB (compl) CSL (received)
(EOR)      0      160      160
(ML) b0dap13.fnal.gov:AWT-EventQueue-0:11:36:24 AM->Strange (but not necessarily
Crate CCAL_00 missing from run
```

Below the main text area are two tabs: "Time sequence" and "Argument sequence". The "Time sequence" tab is selected, showing the following error messages:

```
Crate VRB_SVX_04 missing from run
Crate VRB_SVX_05 missing from run
Crate XFT_FINDER_00 missing from run
Crate XFT_FINDER_02 missing from run
Crate XFT_FINDER_04 missing from run
Crate XFT_LINKER_01 missing from run
Crate XFT_LINKER_03 missing from run
Crate XFT_LINKER_05 missing from run
Crate XFT_XTRP_00 missing from run
IgnoreInhibit should not be set for DataType BEAM
```

At the bottom of the window, it says "partition 2 Listening... (1 mer.mess.)".

Error Logger receives and interprets status and error messages from front end crates and other clients

Status Messages

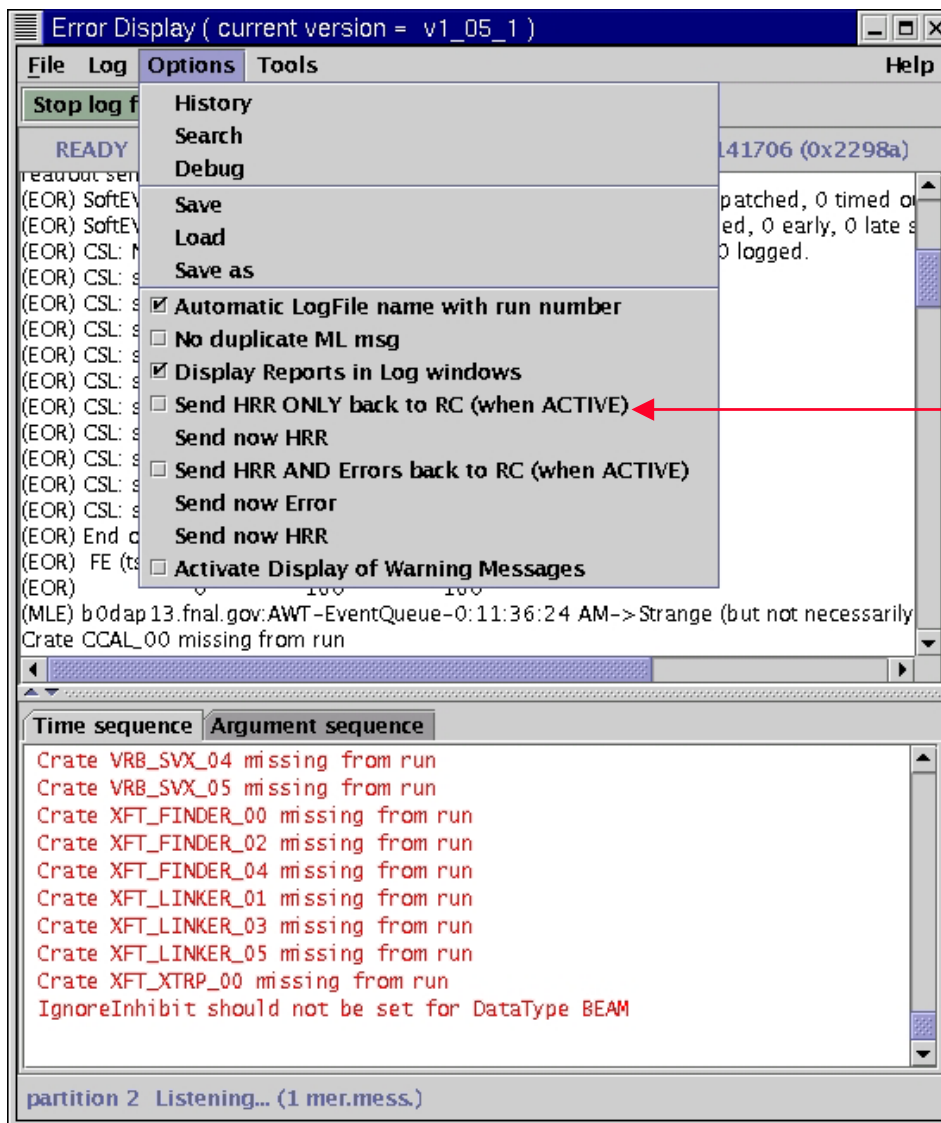
Client errors on Run Control?
Look here for more informations

Error Messages



Error Logger Control Options

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Error Logger can send transition commands to Run Control when specific problems are encountered

Enable automatic HRR here

Error Logger sends orange and red warning windows to Run Control



DaqMon

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09-Apr-2003

The screenshot displays the 'CDF DAQ Monitor' window. It features a left sidebar with expandable sections: 'Run Control status' (RC), 'VxWorks nodes' (VxWorks), 'Scalers' (Rates and Deadtime), 'Trigger Supervisor' (TS), 'Trigger Supervisor' (TS Rate), 'Return Crosspoints' (RXPT), 'Event Builder' (EVB), 'Level 3' (L3), 'Consumer-Server/Logger' (CSL), 'Message Logger' (Merlin), 'FE Monitor Configuration' (FEMon Config), 'CDF Crate Reset' (SYSRESET), and 'Online Database cdfonprd' (Database Status). The main area, titled 'Component Status', lists various system components with their status indicated by colored bars: Event Builder Proxy, Level3 Proxy, Consumer Server/Logger, Resource Manager, Online Database cdfonprd, SlowControl Idle, Clock, Soft EVB (0-7), TSI+L1GL+L2DE, L1 Cal Trigger, L2 Cal Trigger, XFT+XTRP+MUTR, SVT, Central Cal, Plug Cal, Wall Cal, COT, Muons+HTDC, CLC+BSC+MP+RP, and SVX+ISL+L00.

Watching Run Control status is
your first line of defense
Plus, many monitoring tools are
available

DaqMon is your gateway to
many monitors:
setup fer
daqmon
And provides a quick glimpse status
of all systems



VxMon

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At-a-glance summary of all front end crates in the system

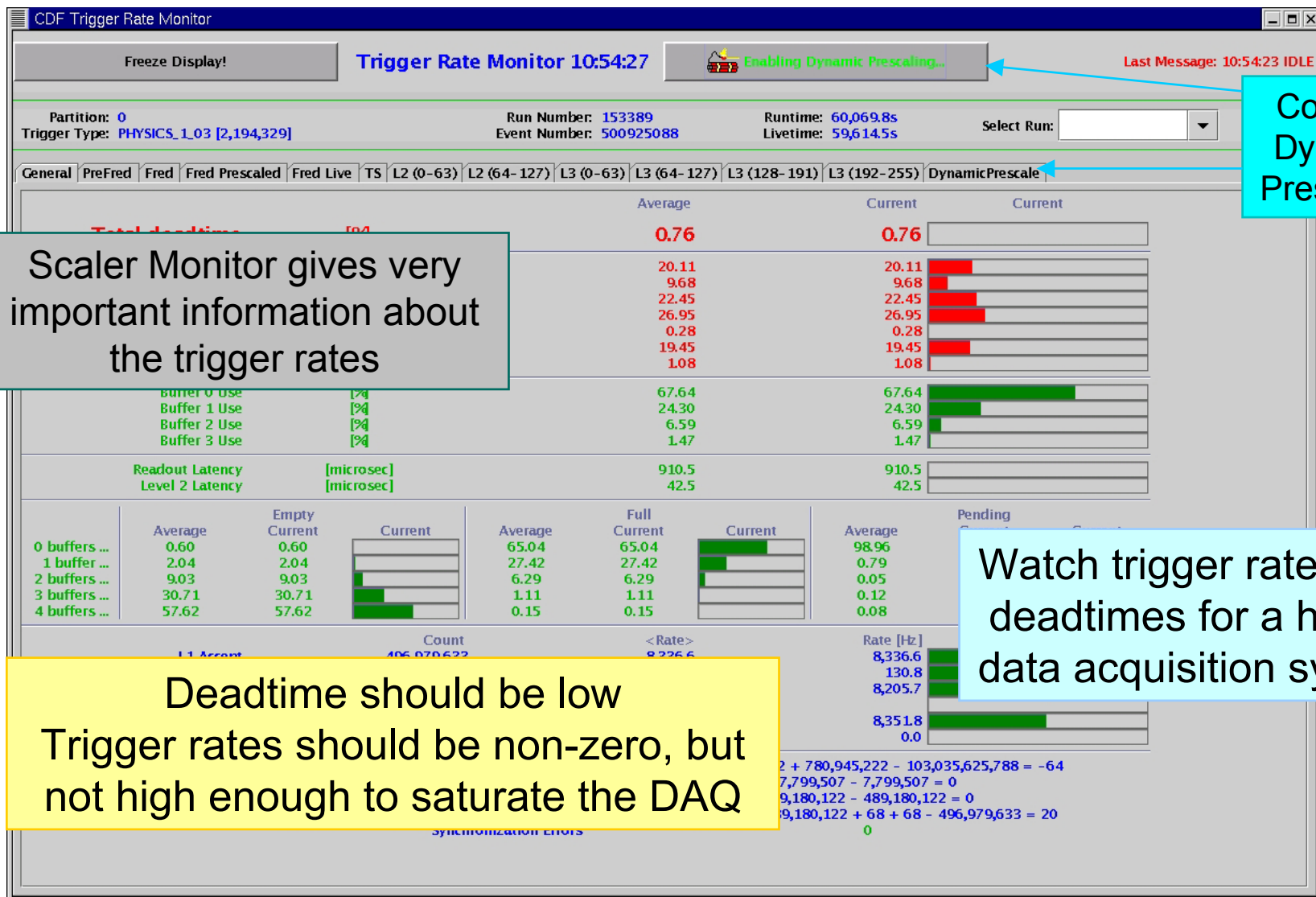
Arnd sez: "Monitoring the Front
End crates is the Ace's most
important job"





ScalerMonitor

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RunSummary Web Pages

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Run Summary Web Pages

Netscape: Run Configuration for run 160441

File Edit View Go Communicator Help

Location: http://www-cdfonline.fnal.gov/cdfdb/servlet/RunSummary?RUN_NUMBER=160441

Run Information CDF Electronic Logbooks

Run Configuration for run 160441: L1 | L2 | L3 | ShiftLog | ErrorLog | SessionLog | StoreDown | SlowControl | Offline

RUN	OUTPUT	PID	DAY	ACTIVE	END	MYLIBC	RUNTYPE	DATATYPE
160441 (0x272B9)	HardEvb	0	2003.03.20	19:00:09	04:11:28	0.0.0	Physics	Beam data

PHYSICSTABLE	L2TAG	L3TCL	READOUT_LATENCY	LEVEL2_LATENCY	FREDLIA	FREDLIA_HZ
PHYSICS_1_04 (4.235.357)	255	669	708.563 micro-sec	38.487 micro-sec	391.947.967	12.283

LIACCEPTS	LIA_HZ	NB_L1	L2ACCEPTS	L2A_HZ	NB_L2	L3ACCEPTS	L3A_HZ	NB_L3
381.792.484	11.886.2	706.792.96	4.437.858	138.2	8.215.58	1.429.503	44.5	2.646.37

CALIBLIA	USER_NODE	REFMTERR	RUNTIME	GFREDTIME	SYNCERRORS	N_HALTS
0	cdfrun@b0dap73.fnal.gov	22 (0.00%)	08:55:20.7	08:51:50.0	0	48

LIVETIME	DEADTIMES	LIDONE	READOUT	L2DEAD	L2_OR_RO	TSDEAD	INHIBIT	WAITBUSY
08:42:29.1	00:12:51.5 = 2.40% =>	1.17%	29.91%	23.80%	12.95%	0.80%	27.31%	4.07%

TEVSTORE	TEVENRGY	LUMI_BEGIN	LUMI_END	LUMI_DELIV	LUMI_LIVE	DFC_LUMI_ONL	DFC_LUMI_OFF
2328	979.10 GeV	21.259 E30	14.006 E30	573.416 nb-1	540.176 nb-1	0.000 nb-1	0.000 nb-1

SVT_EXPERT	SVT_HW	SVT_MAP
null	20030320184914.hwset/2356660797	offline_100030_20030319115712.mapset/1740614991

P_BEGIN	P_END	PBAR_BEGIN	PBAR_END	PLOSS_BEGIN	PLOSS_END	PBARLOSS_BEGIN	PBARLOSS_END
6.177.6 E02	5.636.4 E02	699.3 E02	587.0 E02	3.175.5 Hz	2.505.8 Hz	346.4 Hz	196.3 Hz

GOOD	ANA	RC	CLC	L1	L2	L3	CAL	COT	CMU	CMP	CMX	IMU	SVX	ISL	L00	SVT	SMX	TOF	MNP	BSC
1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1

OFFL	OFF_STS	CLC	L1	L2	L3	CAL	COT	CMU	CMP	CMX	IMU	SVX	ISL	L00	SVT	SMX	TOF	MNP	BSC	
1	OFFL INF=>	null	null	null	null	null	null	null	null	null	null	null	null	null	null	null	null	null	null	null

Netscape: SlowControl

File Edit View Go Communicator Help

Location: <http://www-cdfonline.fnal.gov/cdfdb/servlet/SlowControl?DETECT>

Run Information CDF Electronic Logbooks

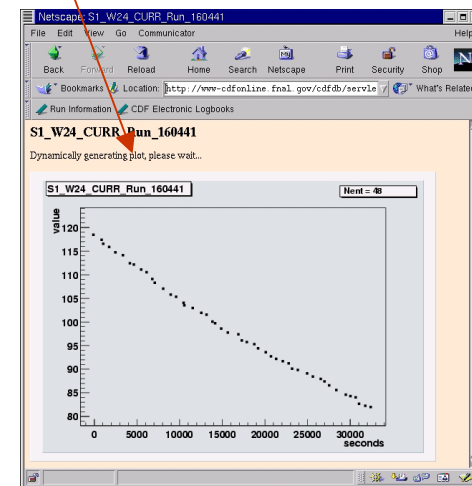
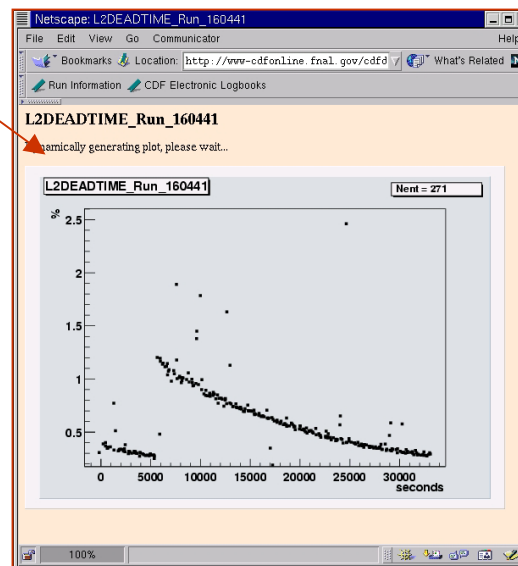
SlowControl

Fetching from database, please wait...

Data below represent 10 minute window around run time; plots show strict run time window

DETECTOR	RUN	BEGIN	END	NOW
SOLENOID	160441	2003.03.20:19:00:09	2003.03.21:04:11:28	2003.03.21:15:13:30

DET_ID	SUBDET	SENS_ID	TAG	DESCRIPTION	IFIX_AVERAGE	STDDEV	N
491	null	12576	S_HALL_PROBE	Hall probe 1 magnetic field	3.092.901	44.803	51
491	null	12577	S_MAG_FIELD	Magnetic field NMR measurement	1.379	0.000	51
491	null	14319	S_MAG_DCCT	Magnetic current	4.647.158	0.015	51
491	null	14320	S_NMR_LOCKED	NMR locked bit	1.000	0.000	51



Run summary pages are dynamically produced, with almost every quantity hyper-linked, with many of the links drawing plots of the quantity of interest

Root used for plotting



Conclusion

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09-Apr-2003

- DAQ Ace's main responsibility is operation of Run Control
- Before your shift, come to CDF control room and try out Run Control features, learn from experienced Aces and other DAQ experts
- Don't understand a feature or warning? Don't ignore! Find out! Page experts if necessary!
- Questions, comments, suggestions, complaints, send e-mail:
cdf-rc-support@fnal.gov
- Urgent problems, page DAQ 722-7579